

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
20 January 2005 (20.01.2005)

PCT

(10) International Publication Number
WO 2005/006100 A3

(51) International Patent Classification⁷: **H01L 21/02**, 27/08, G05F 3/30, 1/10

(21) International Application Number: PCT/CA2004/001030

(22) International Filing Date: 14 July 2004 (14.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 60/486,418 14 July 2003 (14.07.2003) US

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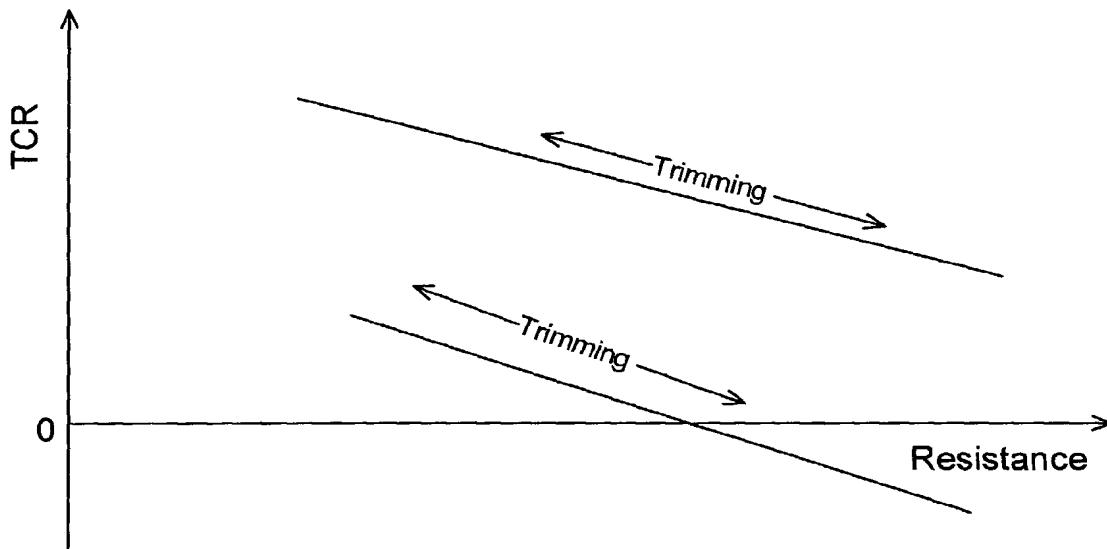
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: ADJUSTING ANALOG ELECTRIC CIRCUIT OUTPUTS



WO 2005/006100 A3

(57) **Abstract:** Electro-thermal trimming of thermally-trimmable resistors is used to trim one or more of the plurality of resistors in or associated with an analog electric circuit. The TCR of each of a subset of a plurality of electro-thermally-trimmable resistors can be trimmed independently from the resistance in order to adjust the output parameter of an analog electric circuit without changing other parameters that would be affected by a change in resistance.



Published:

— *with international search report*

(88) Date of publication of the international search report:

6 May 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA2004/001030

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01L21/02 H01L27/08 G05F3/30 G05F1/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L G05F H01C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 250 445 A (BROKAW ADRIAN P) 10 February 1981 (1981-02-10) cited in the application the whole document -----	1-49
A	US 3 887 863 A (BROKAW ADRIAN PAUL) 3 June 1975 (1975-06-03) cited in the application the whole document -----	1-49
A	US 6 306 718 B1 (HARRINGTON III THOMAS E ET AL) 23 October 2001 (2001-10-23) cited in the application the whole document -----	1-49
A	US 2003/006831 A1 (COADY EDMOND P) 9 January 2003 (2003-01-09) cited in the application the whole document -----	1-49

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Date of the actual completion of the international search

21 January 2005

Date of mailing of the international search report

31/01/2005

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No PCT/CA2004/001030

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
US 4250445	A 10-02-1981	CA 1142607 A1		08-03-1983
		DE 3001552 A1		31-07-1980
		FR 2447059 A1		14-08-1980
		GB 2040087 A , B		20-08-1980
		JP 1637785 C		31-01-1992
		JP 2061053 B		19-12-1990
		JP 55102025 A		04-08-1980
		NL 8000273 A		21-07-1980
US 3887863	A 03-06-1975	NONE		
US 6306718	B1 23-10-2001	US 2002008302 A1		24-01-2002
US 2003006831	A1 09-01-2003	US 2003201821 A1		30-10-2003